

Gas-cutting machine **CODIMAT UL – N**

ANNEX A



Text Modules

H. ALBERT GmbH
Doventorsdeich 17 / 21
28195 Bremen Germany
Tel. +49 421 30 40 40 -- Fax +49 421 30 40 444
www.albert-gmbh.de -- e-mail: albert-gmbh.de

MODULE:

Gas-cutting machine CODIMAT UL-N

CODIMAT UL-N



The gas-cutting machine COPDIMAT UL-N consists of a heavy main carriage made of machined hollow steel profile and a portal of hollow steel profile mounted in a rectangular way. The machine's centre of gravity is on the main carriage. The main carriage runs on 2 large castors on the main rail. One pair of adjustable guide rolls at the front and one at the rear of the main carriage ensure lateral guidance from the main carriage. Thanks to this structure and additional stiffening with an amply dimensioned stiffening plate between main carriage and portal, any vibration on cutting of sharp corners or very narrow radiuses is avoided. Besides, these constructively conditioned good running properties are supported by the calculation routines of the CNC (Look-Ahead-routines, ramps, etc.).

The sum of these properties makes the otherwise necessary double-sided drive unnecessary - an advantage that pays in the long run due to a cheap rail system and a moderately price drive system.

The machine does not need any special girders or foundation strips as an under-floor, a hall concrete floor is fully sufficient. This saves the otherwise usual and expensive foundation work.

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All requirements of the German norm DIN EN 28206 as to the accuracy of the gas-cutting machine are at least met, of course. This applies also to the corresponding norms regarding the cutting quality of the gas-cutting machines.

CNC, switch cabinet, and control desk constitute one unit in a common housing. Thanks to this, the installation of any expensive and possibly susceptible to repairs connecting lines between the single components is avoided.

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MODULE:

CNC 767 Description

CNC – Control M767 with internal SPC



The CNC M767 was designed especially for being used at gas-cutting machines. NC programs can be created by means of the keyboard or loaded from an attached PC.

Besides, 50 **standard figures**, so-called macros, make programming directly at the machine very easy.

The colour monitor shows all important data which the operator needs when cutting. A graphic makes the operation particularly easy. So the cut can e.g. be shown when the program is running.

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From the practice for the practice

The continuous further development of the software – inspired by continuous new suggestions from our customers – has made this control a real **control meeting the requirements of practice** that has all important functions. So there was developed over the years a CNC that is **exemplary as regards simple operation**.

Immediate start – no waiting times

After having been switched on the **control is at once ready for operation**, to fulfil its cutting tasks that shall be performed on the machine. Any reference operation is also **n o t** necessary, but it can be carried out on the customer's request. **There are no waiting times** – as in case of controls on the basis of a PC –.

Reliable and robust

You get a machine control designed for a very long service life and being **extremely reliable** – just on the rough ambience conditions prevailing on gas cutting. Our customers can confirm that to you.

Standardised hardware

The hardware of the control consists of individual structural components inserted in one structural components' support. According to utilization and design of the machine this structural components' support can be individually fitted with standardized structural components for performance of individual functions of the machine. This facilitates spare parts' management and guarantees the customer a prompt service – in any case – since standardized structural components are always **available at once ex store**.

Internal SPC and diagnosis system

The software of the CNC contains a SPC (store-programmable control). With this function direct links between the CNC and the components on the machine (valves, limit switch, etc.) are realized. By means of simple commands the function of the individual components can easily be modified to meet the requirements of the customers in case of need. By doing so, any options which are possibly later installed at the machine are realized mostly just by updating the SPC software. Thus, you have also for the future a control that remains always up to date and adapts to your needs.

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The diagnosis system enables an easy verification of components, as e.g. switches, valves, etc. This enables an easy troubleshooting by the machine operator himself whom we assist by phone during this procedure.

Technical data

Monitor	TFT colour flat screen
Keyboard	dustproof foil keys with clear pressure point
Program formats	ISO or ESSI are the standard formats. The dimensions may be defined absolutely or incrementally, the unit may be mm or inches sein.
Resolution	There can be programmed axial values up to 0.01 mm. The indication shows all positions with one decimal place.
Repeat accuracy	Better than 0.1 mm.
Maximum speed	The CNC can process up to 400 m / min maximum speed.
Cut joint equalization	If a cut joint equalization has been programmed in the NC program, the dimension can be set from 0.1 to 19.9 mm.
Feed	The feed can be set from 0 to 40 m / min. Besides, there can be used an override switch for fine adjustment of the feed when performing NC programs.

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MODULE:

Drive set CODIMAT UL-N

Drive set complete

The drive set of the gas-cutting machine CODIMAT UL-N consists of the AC servomotors with transmission and drive pinion, the suitable servo regulators as well as of a swivelling holder for enabling an easy mounting of the drives onto the machine. One drive set contains single drives, i.e. one for the longitudinal axis (X axis) and one for the transversal axis (Y-axis).

AC servomotors with transmission



The brushless and maintenance-free servomotors of the line of products distinguish themselves particularly by their little moment of inertia. Due to this, we achieve very short acceleration and braking times of the gas-cutting machine as a result of which we get a very good adjustability and dynamic behaviour.

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Servo-regulator



The AC servomotors are controlled through servo-regulators. We use these regulators of a renowned German manufacturer because these regulators have proved to be reliable in many practical applications.

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MODULE:

Operating unit 12

Operating unit type 12

This operating unit is equipped with the following keys and switches for the operation of the gas-cutting machine CODIMAT UL-N:

1 piece main switch

By means of the main switch the control of the machine is switched on.

1 piece key with luminous indication for MACHINE ON

1 piece key for MACHINE OFF

By means of the keys for machine ON and OFF the machine is switched on and off.

1 piece EMERGENCY-OFF-mushroom switch

For quickly switching off in a case of emergency the EMERGENCY-OFF-mushroom switch is pushed.

1 set complete set of switches and indication lamps for control of all further machine functions

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MODULE:

Basic Equipment Autogenous

Basic Equipment Autogenous

For autogenous gas-cutting, basic equipment is necessary in order to be able to select the burnable gas (e.g. acetylene or propane) and the heating oxygen and the cutting oxygen. For this purpose, the gas-cutting machine CODIMAT UL-N has a gas **board** of special steel in which the necessary components are ready mounted and connected.

This basic equipment in the gas **board** consists of one pressure reducer with manometer indication for selecting the gases as well as one ball valve for cutting oxygen that is driven through a motor (motor valve). All these components are connected with each other by means of the corresponding gas hoses.

At the gas **board**, the gas supply is connected (inlet side). At the outlet side of the gas **board**, up to 4 autogenous torches are connected.

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MODULE:

Height Regulator capacitive

Height Regulator (capacitive)



To achieve good cutting results on autogenous gas cutting or on gas plasma cutting a constant distance between the cutting nozzle and the material is necessary. By height regulation there can be achieved continuous torch guidance.

In the operating mode MANUAL OPERATION the torch moves with maximum speed upwards or downwards when the key LIFT or LOWER is pushed. In the operating mode AUTOMATIC the torch moves into a previously set specified position and keeps it then

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constantly. In AUTOMATIC OPERATION this distance can be set subsequently by actuating the key LIFT or the key LOWER.

As accessory a sensor, which is mounted onto the gas-cutting machine, is delivered together with every regulator. This sensor is connected with the regulator through a heat-resisting special line.

MODULE:

Switch Cabinet for the Machine

Switch Cabinet for the Machine

On the portal of the CODIMAT UL-N a switch cabinet for the machine is installed which contains the electric and electronic component parts for controlling the machine. The switch cabinet is manufactured in such a way that all lines to and from the switch cabinet are led through connectors. Thus, the connection of the individual components on the machine can be carried out very easily. For the purpose of installation, a documentation being detailed as to text and figures is delivered.

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MODULE:

Tooling Equipment for Autogenous Technology

Tooling Equipment for Autogenous Technology

For autogenous gas cutting with a machine flame cutter the proper equipment is important for the safety and function of each tool.

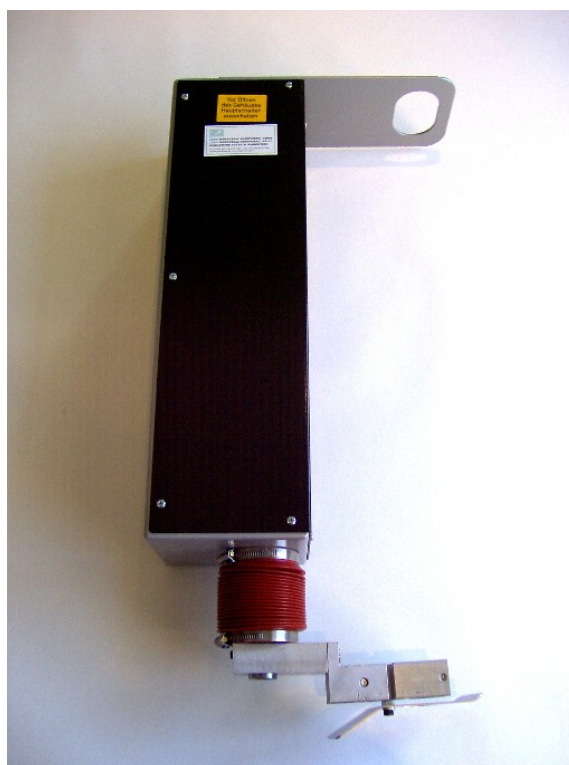
This equipment consists of the machine flame cutter, the adjusting valves for the cutting gases, reverse-current fuses for the individual kinds of gases and the hose connections between the cutting tool and the central gas **board**.

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MODULE:

Toolholder LKN 250

Toolholder LKN 250



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At the tool-holder the flame cutter is mounted. The tool is mounted onto a tow car and moved by it along the portal, i.e. in the transversal axis of the machine.

Technical data:

Maximum height motion: 250 mm
 Carrying force max. 500 N (weight of 50 kg)
 Torch holder bore: 32 mm for autogenous cutting apparatuses (standard)

MODULE: (as an option) Software **cncCUT** from IBE GmbH

Software **cncCUT** from IBE GmbH

From the drawing to the finished part

cncCUT was developed to meet the requirement for comprehensive functionality but combined with very easy operation.



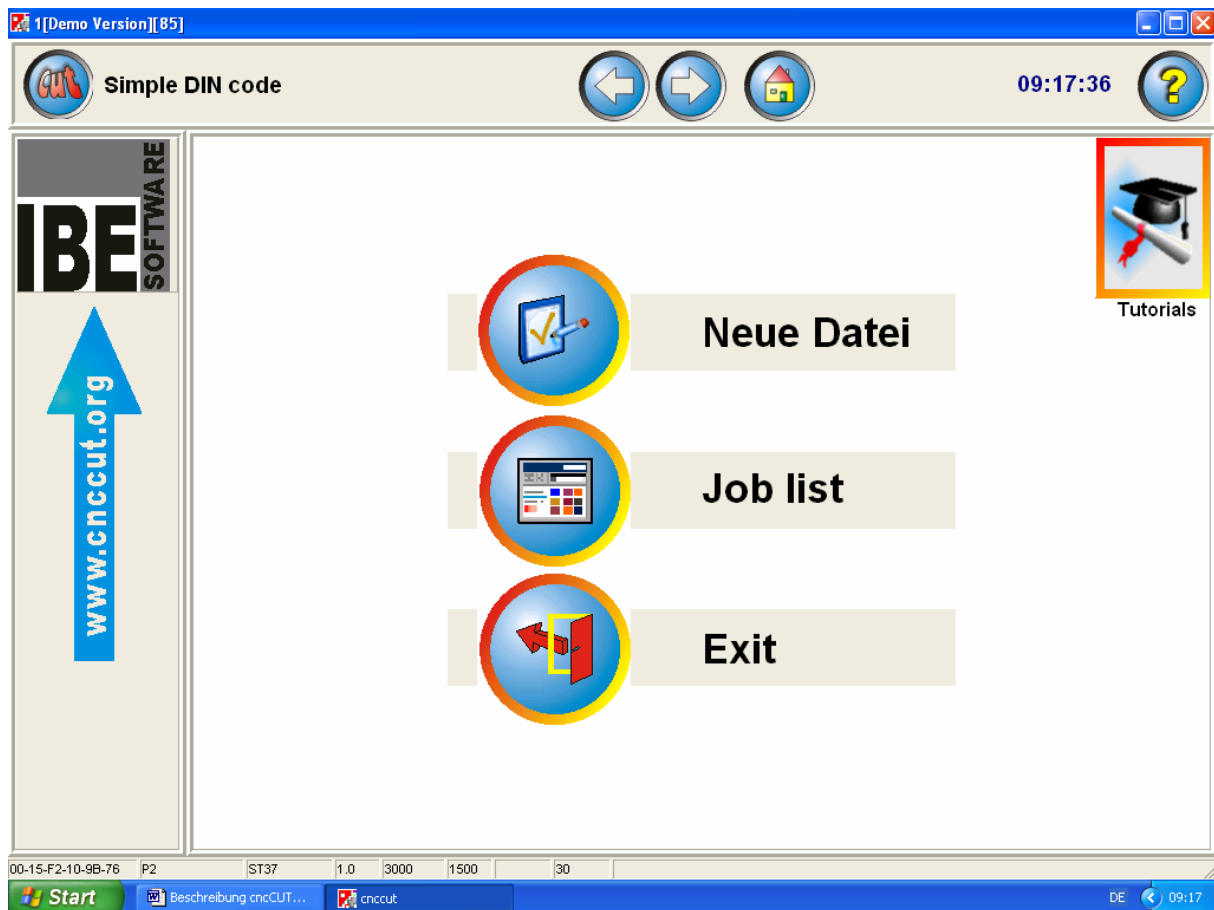
Very easily and without having any previous knowledge you can load the DXF drawings into **cncCUT**. The software develops from it on the selected metal sheet a proposal regarding the cutting path. In a simulation you can take a look at the latter. You can simply accept the proposal by mouse click and a gas-cutting program is developed automatically which you can send then to the machines.

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Besides, you have all options provided by this comprehensive software, as e.g. full automatic interlacing of the component parts in various interlacing patterns, or change of the cutting paths.

Hereinafter we should like to show you how easy it is to operate cncCUT!

Having started **cncCUT** you get the main menu



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You choose

Neue Datei [New File]

1[Demo Version][85]

Simple DIN code

Aktuelles Fenster
Platten DB 09:17:59

Aktuelle Plattenparameter

Material: ST37

Dicke: 1.0

Breite: 3000

Höhe: 1500

Geschwindigkeit: 900

Schneidbahnoffset: 0.0

keine Plattenabmessungen

Plattendatenbank

Material	Dicke			Gesch	Schneid	Restplatte	Restplattenbe
ST37	1.0	2000	1000	900	0.0		
ST37	1.0	2500	1250	900	0.0		
ST37	1.0	3000	1500	900	0.0		
ST37	1.0	4000	2000	900	0.0		
ST37	1.0	6000	3000	900	0.0		
ST37	2.0	2000	1000	900	0.0		
ST37	2.0	2500	1250	900	0.0		
ST37	2.0	3000	1500	900	0.0		
ST37	2.0	4000	2000	900	0.0		
ST37	2.0	6000	3000	900	0.0		
ST54	3.0	2000	1000	900	0.0		
ST54	3.0	2500	1250	900	0.0		
ST54	3.0	3000	1500	900	0.0		
ST54	3.0	4000	2000	1000	0.3		
ST54	3.0	6000	3000	1000	0.3		

00-15-F2-10-9B-76 ST37 1.0 3000 1500 30

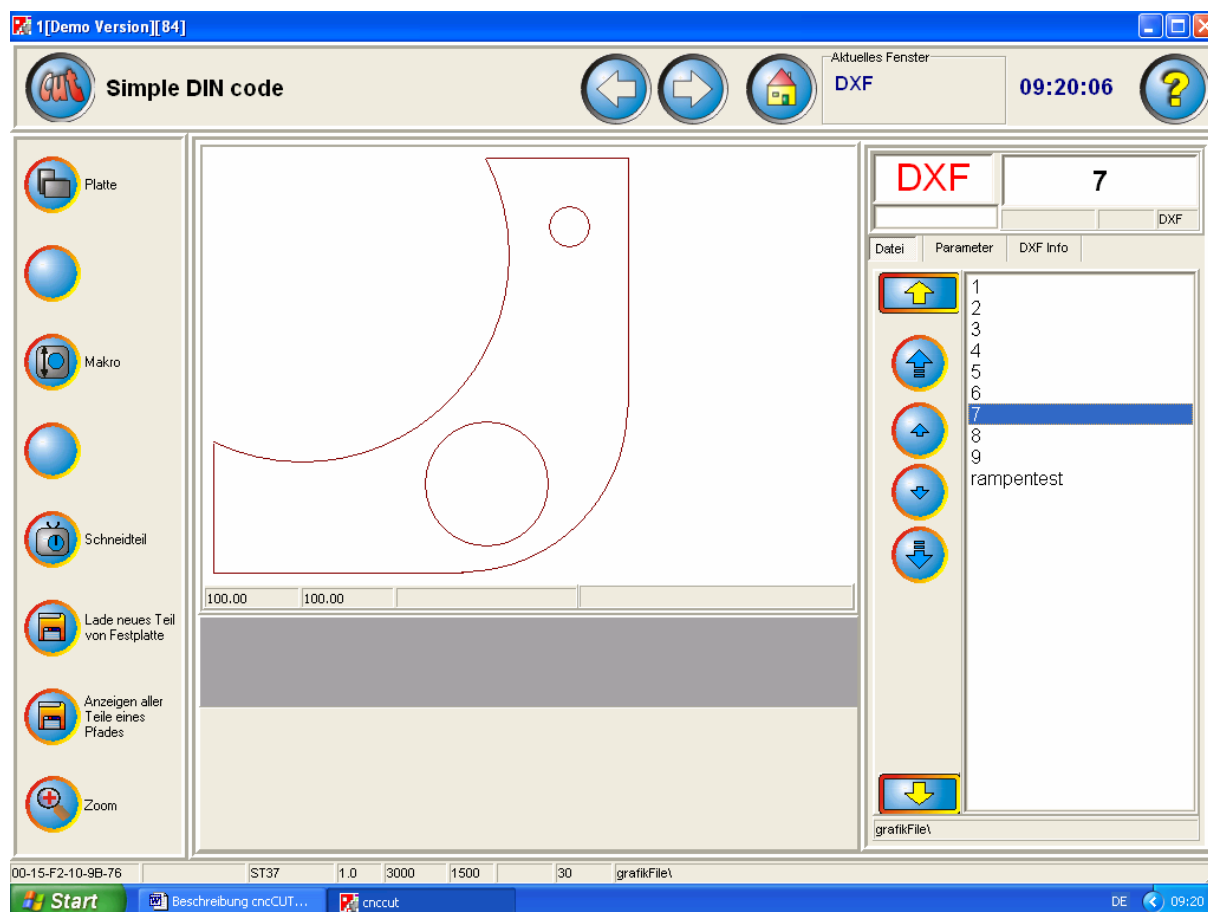
Start Beschreibung cncCUT... cnccut DE 09:17

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From the extensive data base
you select the metal sheet on which you want to interlace your parts
to be cut.

Here you select, in addition, the forward feed on cutting and the size
of the cut joint equalization.

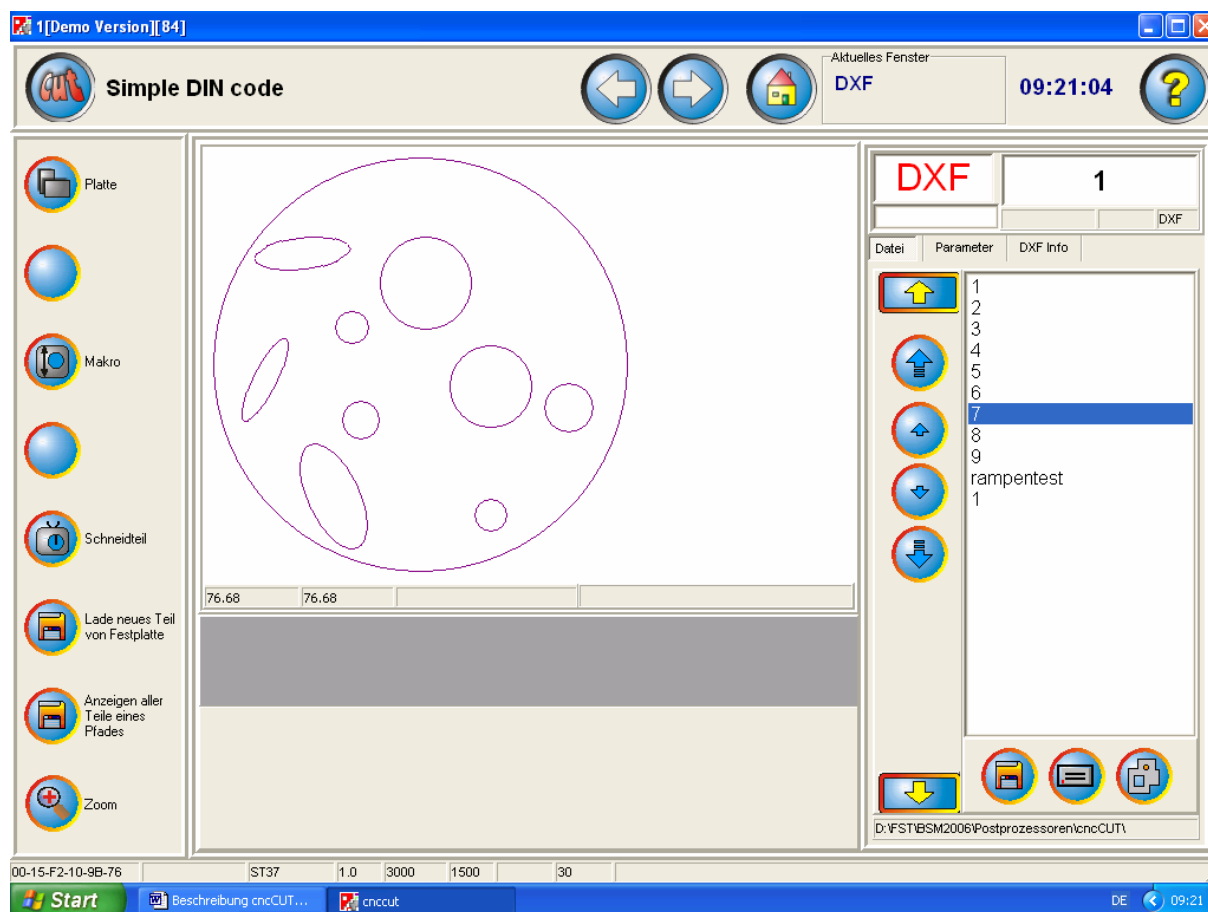
Click on the arrow sign WEITER [CONTINUE]



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Now you click on

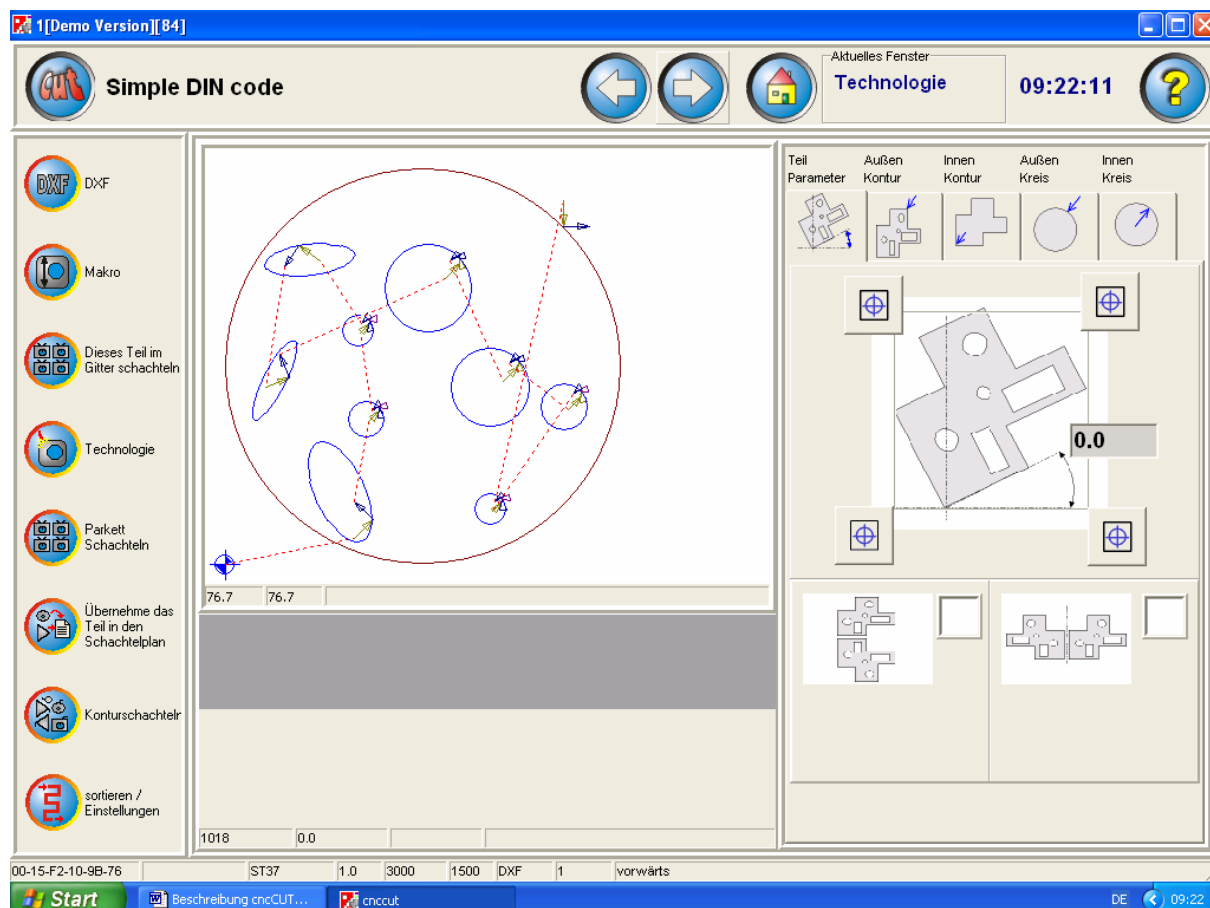
LADES NEUES TEIL VON DER FESTPLATTE
[LOAD NEW PART FROM THE HARD DISK]
 and select your parts.



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This part is then displayed.

Click on the arrow sign WEITER [CONTINUE]



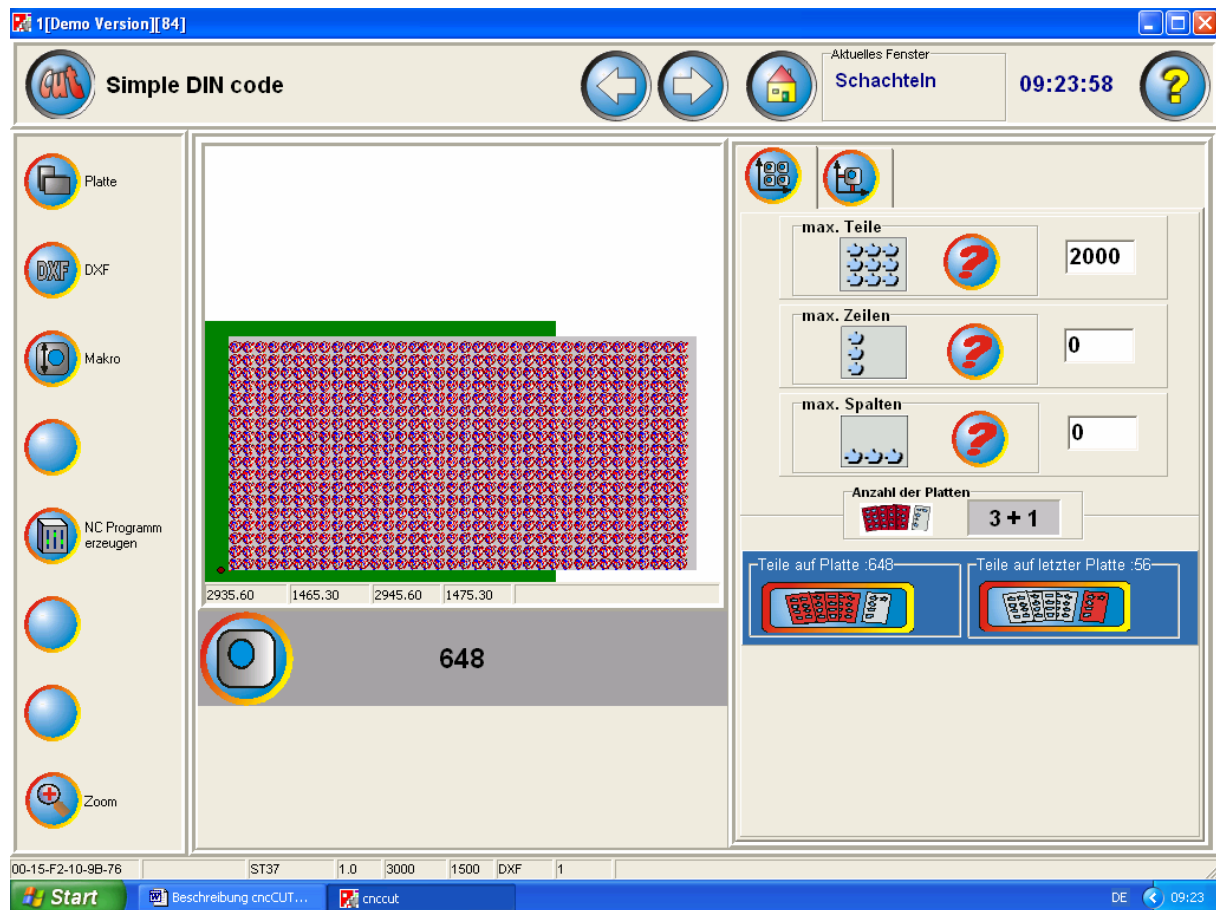
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cncCUT shows you the proposal how to cut the part.

You can simply accept the proposal,
click again on the arrow sign WEITER [CONTINUE],

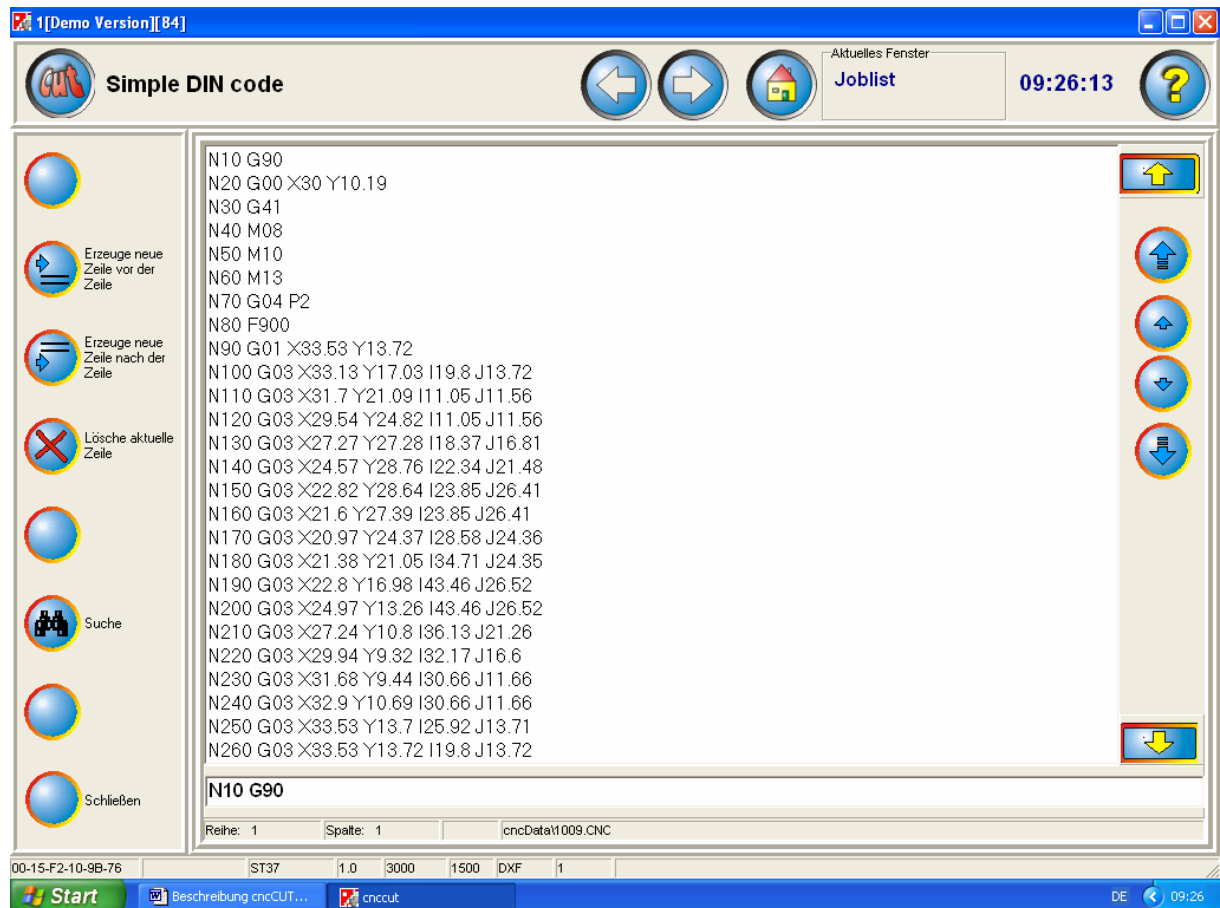
or you can alter the proposal,
by choosing e.g. another contour start point etc.

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You also decide how many parts you will cut
 and **cncCUT** develops herefrom
fully automatically
 the complete gas-cutting program

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Then you can send this program to your gas-cutting machine.

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